

Box 41

THEOSOPHY AND MODERN SCIENCE

By

EDITH WARD.

BEING THE SUBSTANCE OF
A LECTURE DELIVERED FOR
THE WEST LONDON LODGE OF
THE THEOSOPHICAL SOCIETY,
OCTOBER, 1906.

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“Two sciences are to be known, thus it has ever been, as they who know God say, the higher and the lower.”—MUNDAKOPANISHAT, pt. 1, v. 4.

Theosophy and Modern Science.

IF the word Theosophy be taken in its deepest, truest signification then the title of my lecture is to some extent a misnomer. Theosophia—Divine Wisdom—cannot be spoken of in relation to Modern Science for it embraces *all* Science—Ancient and Modern—it can be outside none, no knowledge can be outside Divine Wisdom. We are sometimes asked to define the term “theosophic standpoint”—even theosophical journals ask the question as though it were a conundrum (doubtless for journalistic reasons). Surely the answer is to be found in an ancient Indian Scripture which runs:—“He who sees but ONE in all the changing manifoldness of this universe, unto him belongs eternal truth—unto none else—unto none else.” To know that Unity as an intellectual truth is to recognise the theosophic standpoint: to endeavour to *live* it—which is a very different matter—is to be a theosophist; to live and realise it in all its fulness is to become a Master of Life and Death, to have made one’s consciousness one with the Divine. Now the purpose of Modern Science has been defined as:—“The intellectual unification of the mind of Man and the mind of God,” and if this be true it is the same ideal of unity which meets us again. Emerson expressed it as:—“The extension of man on all sides, into Nature, till his hands should touch the stars, his eyes see through the earth, his ears understand the language of beast and bird, and, through his sympathy, heaven and earth should talk with him.” If this be so there should indeed be no antagonism between Theosophy and Science, but, as a matter of fact it is a narrower definition of Theosophy that we most of us are thinking of when the word is used nowadays, and, alas, it is a very dwarfed and distorted idea, compared with Emerson’s fine ideal, that we associate with the term Modern Science. In the narrower definition Theosophy has come to mean a

number of statements about God, Man and Nature which have been made by a number of students in a variety of books, on authority of very diverse value. On the other hand, Modern Science has come to connote a large mass of observed and recorded phenomena upon which is erected (not always very securely) a heavy superstructure of theory and hypothesis.

If we were asked to indicate the fundamental difference of view-point between Theosophy and Modern Science we might best perhaps state it in a phrase: the one concerns itself with a study of Life—the other with the study of Form. The one is concerned with Consciousness the other with its vehicles. The one regards the material universe as spirit made manifest in the flesh—the other sees in the material the promise and potency of intellectual life.

Differences of method are not less marked than difference of standpoint. The methods of science are elaborate and oft-repeated experiment, accurate observation, careful comparison, rigorous analysis, and the contrivance of most beautiful and intricate apparatus by which the external organs of sense can be enormously extended in their field of operation. By telescope, spectroscope and photographic lens man "touches the stars," in Emersonian phrase; by microscope he probes the nature of the 'physical basis of life'; by the marvellous ingenuity of his application of electricity he begins in very truth to touch the region of a 'fourth dimension.' And so, reasoning from effects to causes, from the seen to the unseen, he stands upon the threshold of the Temple of Truth. The methods of Theosophy are otherwise. The student here begins with himself and, by meditation, by endeavouring to identify himself with the Life in all things, by self-purification, seeks to become more and more responsive to the impacts from the surrounding universe and thus to understand it. His method is expansion of consciousness "*thro' sympathy*," as Emerson puts it, so that "heaven and earth should talk with him," and reasoning from the general to the particular he builds a grandiose conception of the whole universe pulsing with consciousness—one in a Divine Life of whose heart-beat he feels the thrill.

If you call this religion and not science I answer in the words of the ablest exponent of Modern Theosophy, "In old

times Religion and Science were one, wedded together, and there was no discord between the Intelligence and the Spirit," and if you maintain that that is 'merely' a theosophical opinion I remind you that Sir Oliver Lodge has written:—"The region of religion and the region of a completer Science are *one*." But, mark you, a "completer" science—it would seem, therefore, as scientific "knowledge grows from more to more" it should bring us ever nearer to the portal of wisdom. There are some who stand upon the hilltops, who seem to signal the dwellers in the valley that the light dawns beyond the hills, and in the confidence which such signalling inspires we can begin to pick our way and recognise in the shadows, which the darkness made the foe, but the forms of allies making for the same encampment as ourselves. For surely it follows if Science is working from without inwards and Theosophy from within outwards the two are bound to meet. It must be so, and to the thoughtful student the signs of the times point all in that direction. Even Haeckel who is honoured, or scorned, as the typical materialist, has written that "the antithetical positions of theism and pantheism—vitalism and mechanism, approach *until they touch each other*."

In much of the early literature of the Theosophical Movement the exponents of Modern Science were held up to scathing ridicule. It cannot be maintained that the scorn was altogether undeserved, when we recall the large pretensions a science, but recently released from the bondage of theology, had allowed itself to make. On the other hand the virulence of attack on the statements of occultism could only be excused on the ground of profound ignorance—ignorance of many facts in Nature which official Science has since demonstrated to its own satisfaction. Such violent antagonism is happily a thing of the past, but on neither side is the real identity of goal sufficiently recognised. It has always been my belief that in physical science would finally be found the greatest demonstration of the truth of Theosophy to the Western World, and for this reason:—If modern Theosophy be a message of hope, a measure of education, conveyed through many channels from the Wiser Brethren who watch over human development, then it is bound to fulfil its appointed purpose along the line of least resistance, which means by

way of what has been called the Spirit of the Age—in other words, to flow in the scientific mould. In the strength of this conviction I devote the remainder of the time at my disposal to some illustrations—a very few out of a large number which could be drawn upon—of this coming unity. From the nature of the case, such illustrations will take the form of brief statements from theosophical sources with regard to facts in Nature which have been publicly made prior to the demonstration or suggestion of the same fact from scientific sources.*

Let us take first the problem that is prominently before the world at the present time—the constitution of matter—a problem at once for the chemist and the physicist. Leaving out all theosophical views as to finer forms of matter than the physical, we may confine ourselves to the physical plane, in which there are, according to Theosophy, seven sub-states, or planes, or conditions of matter, viz.: the solid, liquid, gaseous, and four etheric states, the last of which is that of the ultimate atom of the physical plane. The clearest and most precise statement with regard to the nature of this ultimate atom, and the way it is combined to form the matter of each of the six physical sub-states above it, is to be found in an article by Mrs. Besant on *Occult Chemistry*, first published in *Lucifer* for November, 1895, and since issued as a pamphlet. To this article, and the diagram by which it is accompanied, I must refer you for full details, but, briefly, the view there put forward is that the so-called atom of the chemist is no true atom (indivisible particle) at all, the elementary substances are not elementary, but that all are built up of various combinations of the true ultimate physical atom or particle. These combinations differ in the number of ultimate particles they contain, and in the way they are linked together; in other words,

* It may be well here to state, clearly, that it is not claimed that statements made in modern theosophical books are invariably new to the world—revelations fresh from some theosophic mint. On the contrary they embody much that is very old, and that can be found, often under fantastic guise, in the writings of scientists, philosophers, seers and mystics of all ages, but the great feature of the Theosophic Movement is that it gathers together and focuses into one luminous whole the scattered and refracted rays from a thousand lamps, which, in their isolation, made only darkness visible.

the internal structure of each chemical "atom" is different. And note, further, that the particles are linked together by lines of force playing between them—by their negative and positive, attractive and repulsive properties, in short, by electrical and magnetic energies. Yet further, the particles and their various combinations are shown to be in violent motion, rotation and vibration, and to maintain definite positions in relation to each other within the sphere of the atom. Finally, the number of ultimate particles was stated to be in direct ratio to the atomic weights of the elements—a point of great interest and importance. Now this, as I remind you, was a definite formulation of the results of clairvoyant investigation put forward in 1895. Let us turn to the side of Science. I quote from Sir Oliver Lodge's Romanes Lecture of 1903, entitled *Some Modern Views of Matter*. He has been describing the electron, and he continues:—"It becomes a reasonable hypothesis to surmise that the whole of the atom may be built up of positive and negative electrons interleaved together, and of nothing else; an active or charged ion having one electron in excess or defect, but the neutral atom having an exact number of pairs. The oppositely charged electrons are to be thought of on this hypothesis as flying about inside the atom, as a few thousand specks like full stops might fly about inside this hall, forming a kind of cosmic system under their strong mutual forces, and occupying the otherwise empty region of space which we call the atom, occupying it in the same sense that a few scattered but armed soldiers can occupy a territory; occupying it by forceful activity, not by bodily bulk." Here we get the same negative and positive forces—mutual repulsions and attractions, and the same forceful activity maintaining what in Mrs. Besant's article is called the "sphere wall" of the atom. The parallel is very striking, and becomes more so in view of considerations which time does not permit me to enter into in detail.

Take another point in connection with these extremely "modern" views of matter. In 1889 Madame Blavatsky first published her great work, *The Secret Doctrine*. In Vol. I., p. 136, you will find a statement to the effect that the President of the Theosophical Society, Col. Olcott, lecturing in 1882, made the assertion that "electricity is

matter." Naturally he was derided for this, and Madame Blavatsky reiterates the assertion and defends it, and asserts that electricity is atomic. Orthodox science at that date scouted such a crazy idea, and besides who was going to believe the statements of a charlatan like Madame Blavatsky! But what do we find in 1904? Prof. J. J. Thomson publishes a book about *Electricity and Matter*, in which he has a whole chapter on "The Atomic Structure of Electricity": Sir Oliver Lodge talks about "a sort of atom of electricity," and, after explaining that by thesis he means an opinion in which his fellow physicists will all agree as proven, writes thus:—"My first thesis is that an electric charge possesses the most fundamental and characteristic property of matter, viz., mass or inertia; so that if one were to speak of a milligramme, or an ounce, or a ton of electricity, though he would certainly be speaking inconveniently, he might not necessarily be speaking erroneously!" And yet again, "The fundamental ingredient of which, on this view, the whole of matter is made up, is nothing more or less than electricity, in the form of an aggregate of an equal number of positive and negative electric charges." So, we may conclude, when Madame Blavatsky wrote in the *Secret Doctrine* of electricity, light and heat, etc., as all having "been aptly termed ghosts or shadows of matter in motion, i.e., supersensuous states of matter whose effects only we are able to cognise," she was probably writing a little too previously for the scientist of 1889, but "not necessarily speaking erroneously!"

Another extremely fascinating line of study, still connected with the building of matter, is the relation of sound to the creative energy of the universe. I can only refer to it in barest outline, but turn to your *Secret Doctrine* and study carefully what is there written about sound and number and form, or read in *The Building of the Kosmos* the first lecture entitled Sound, and you will realise how occultism emphasises the truth that Sound—the creative word—lies at the root of all manifestation. In the cosmogonies of all religions we meet the same thought. We have it in the Hindu Vach—creative voice—as in the Greek Logos and the Latin Verbum. In St. John's Gospel it is the Word without which "was not anything made that hath been made"—in the Book of Genesis we read "God said" . . . "and it was so." What

does it all mean? What did Pythagoras mean when he said he heard "the ordered music of the marching orbs," and when he propounded his "riddle" about the harmony which depended upon the relation of whole small numbers, a riddle which the centuries waited for a Helmholtz to unravel? It seems to mean this, and no less than this, that the electric vibratory energy which thrills through the solar cosmos, linking planets to their central sun as it links electron to electron, atom to atom, molecule to molecule, cell to cell in every combination and form in this vast system, works under that same law of rhythm which declares that harmony—music—is produced only when the rates of vibration of notes in the scale are to each other in the ratios of whole small numbers. Every musician knows that chords formed of a note and its octave with the third or fifth are harmonious, whereas chords introducing notes with shorter intervals are discordant, and most people are aware that every note is the resultant impression on the human auditory apparatus of the vibration of wire, strings, air, metal or what not a given number of times per second. Now when the number of vibrations that produce a note are exactly doubled, we get the octave, that is, the ratio between the two numbers is the simplest we can have, viz., as 1 to 2. So with the other components of a harmonious combination the ratios are those of whole small numbers. Moreover, a musician can detect under certain conditions the harmonics or overtones, as they are called, when the primary note alone is struck upon a musical instrument; and when he comes to write down his scale of harmonics—in other words to represent pictorially the space relationships expressed by the different rates of vibration—some very suggestive facts reveal themselves. In the first place he may discover, if he knows something of astronomy as well as music (as Pythagoras did, you may remember), that when the sun and the planets of our system are shown drawn out to the scale of *their* space relationships *they* exactly reproduce the musical spacing of a fundamental note and its harmonics, so he may bethink himself that there was more than poetic imagery in the mind of the Sage who heard the music of the spheres, as also in the mind of him who wrote of the morning stars singing together. But that is not all. We saw just now that Sir Oliver Lodge referred

to the interior of a chemical atom "as a kind of cosmic system," and elsewhere he has written of the "orbital motions" of electrons, and said "even inside an atom of mercury, therefore, the amount of crowding is fairly analogous to that of the planets in the solar system," so perhaps we should not feel any surprise when we learn from a beautiful experiment, first made by Prof. Mayer, and described at length in J. J. Thomson's *Electricity and Matter*, that so far as Modern Science can as yet demonstrate it, the musical law holds good for the atom as it does for the cosmos, and the relative positions of the electrons within the sphere of the atom are based upon geometric relationships which correspond to the ratios of whole small numbers. Moreover, it is shown that except in such strictly limited geometrical relationship no stability of structure is possible. Let me briefly describe the experiment, so that you may form a clearer mental picture of the line of reasoning. On the surface of a vessel of water are floated a number of very small magnets all of equal strength. They consist of magnetised needles, floated by means of discs of cork, and must be all with the same magnetic pole upwards. Over the vessel is suspended a larger magnet with the opposite pole downwards—*i.e.*, if the small magnets have their negative poles upward then the larger one must have its positive pole downwards, and *vice versa*. What happens is this; if only two small magnets are on the surface they form a line thus ••; if a third is added, they re-arrange themselves and form a triangle, thus •••; place a fourth on the water and they again re-arrange themselves at the four points of a square, thus :•:; add one more and the five points of a pentagon are marked out, thus :••. When the experiment is continued further, the circle does not increase, but the beginning of a fresh series is shown until it is possible to build up a figure of considerable complexity due to the repetition of the 1 to 5 arrangement. Now this is a geometrical arrangement on a flat surface, *i.e.*, in two dimensions, but if we conceive of the same forces at work in three dimensions, as must be the case, of course, within the atom, we are at once confronted with a mental

picture of the corresponding solid figures, and what are they but the five regular geometrical solids or Platonic bodies, in one or other of which it is alone possible to construct a *stable* arrangement of matter in our three-dimensional world. Students of crystallography will be very familiar with this thought, but it may not be equally familiar that these same Platonic solids were used in the Ancient Mysteries, and tradition brings them to us under name of "playthings of Bacchus." Ay, playthings of the "Mystery God," whose play or *lila*, as the Hindu has it, was the world-drama, the creative energy "without which was not anything made that hath been made." Who ventures to say that in those Ancient Mysteries some of the latest views of Modern Science were not anticipated? When we find Prof. J. J. Thomson showing how this electro-magnetic theory of matter will explain such phenomena as are familiar under Mendeléeff's periodic law, valency, double and triple lines in the spectra of certain elements, etc., and when we find that the same theory of electro-magnetic energy is just *beginning* to be applied by one or two thinkers as an explanation of what has hitherto been termed the law of gravity, we cannot, I think, but realise that Modern Science is standing on the threshold of a door, which, fairly open, will allow a flood of light to illumine some of its profoundest problems, and pave the way for a reverent recognition of the one great law of harmony in the universe which moves to righteousness under the impulse of the *Voice of God.**

Turning now to another field of study—that of Astronomy—or more correctly, solar physics—we find Mme. Blavatsky asserting in the *Secret Doctrine* that the sun is to be looked upon as the vital heart of the solar system in precisely the same way as the heart in the human body. She maintains that there is a great beat of the solar heart throwing currents of vital electricity to every part of the solar system, and a return of these currents in a great circulatory system which is com-

* The readers' attention is specially directed to an article entitled the *Warp of the Universe*, by Newman Howard, in the *Hibbert Journal* for January, 1905, and to the series of three articles by G. Dyne on *Sound the Builder*, which appeared in the *Theosophical Review* for October, November and December, 1903.

pleted every eleven years. This corresponds with the sun-spot period, and in fact, Mme. Blavatsky adds that could the living human heart be illuminated and reflected upon a screen the picture presented would be precisely that of sun-spot phenomena. It has been stated that this was verified by an observer of a detestable vivisectionary experiment on a dog in Vienna. I am unable to give any scientific confirmation, so it may pass for what it is worth, but if we turn to the *Transactions* of the Royal Society reporting the results of last year's eclipse observations, we find that they confirm the fact that the sun's corona goes through a cycle of changes in exactly the same period, *i.e.*, eleven years, and corresponds to the periodicity of sun-spots. Commenting upon these results, the Hon. R. J. Strutt remarks "It is found, in fact, that the whole activity of the sun, including the amount of heat it radiates to the earth, undergoes a *regular pulsation* in eleven years." [The italics are mine.] This, at any rate, is a suggestive expression. In *Five Years of Theosophy*, p. 163,* we read with regard to the nature of the sun "Beyond rotates and beats the heart and head of our system; externally is spread its robe, the nature of which is not matter, whether solid, liquid or gaseous, such as you are acquainted with, but *vital electricity*, condensed and made visible." With this it is interesting to compare Miss Clerke's *Modern Cosmogonies*. "In the stars," she writes "a species of vitality may be said to reside. They are not finished-off products, but spontaneously-acting machines. They are centres of energy, which they dispense gratis, supplying the cost out of their own funds." Then later, writing of certain spectroscopic evidence of changes in hydrogen in the stars, she remarks: "What those conditions actually are we cannot tell, yet it may be confidently surmised that they will prove to be of an electrical nature." And, once more, writing of changes in the character of the spectra of stars: "Yet it can no longer be interpreted as indicating for them an excessively high temperature. Rather, it would seem that electrical conditions, still imperfectly defined, are in question, and their gradual removal or

* This is a reprint of an old article from *The Theosophist*, by Mme. Blavatsky.

subsidence is, beyond doubt, largely instrumental in bringing about the transition to the solar stage." Moreover we find Father Himalaya, a Portuguese priest and professor of physics, asserting "that the origin of the heat of the sun is electrical." "I am prepared to maintain, successfully, that the heat of the sun is not due to shock or to contraction of nebulæ, or to oxidation or to radio-activity. It is of electrical origin."*

Further, in connection with a theory offered in explanation of the earth's magnetic storms, Prof. Schuster suggests that the sun emits electrically-charged particles "to a greater or less extent, and is thus able to impart electrical conductivity to the upper regions of the earth's atmosphere."

This brings us to the further statement of occultism emphasized by Madame Blavatsky, that the sun is a great magnet and that the so-called force of gravity is in reality an electro-magnetic force acting throughout the solar system. I cannot do better than refer you to an excellent article by Mr. G. E. Sutcliffe, which has appeared in *Modern Astrology* for September of this year, for in this you will find much detail on this subject worked out from a scientific and mathematical standpoint together with references to the *Secret Doctrine*.

Mr. Sutcliffe's conclusion is that "everything that can be deduced from the force of gravity can also be deduced from the electro-magnetic theory. Whilst this theory, on the other hand, tells us more than the theory of gravity, since it explains the magnetic forces working throughout the solar system, which the theory of gravity does not." In 1903 Mr. W. G. Hooper published a work entitled *Æther and Gravitation*, in which a precisely similar theory was set forth in great detail, and with a wealth of quotation from scientific sources. The views expressed were in remarkable conformity with those of the *Secret Doctrine*, but the writer assured me that he never heard of Theosophy until after the publication of his work, and was amazed and delighted to find others holding similar views to his own.

One more illustration before we pass to another subject. I give it with special emphasis because it is a remarkable

* Quoted in *Science Siftings*, December 17th, 1904.

testimony to the reality of Madame Blavatsky's claim to special sources of information. Remember that she is writing prior to 1889, when the *Secret Doctrine* was published, and she had been discussing Sir William —then Mr.—Crookes' recent investigations into what he called a fourth state of matter or radiant matter, by means of the now well-known Crookes' vacuum tubes. On page 681 of the first volume of the *Secret Doctrine* appears this footnote: "How true it is will be fully demonstrated only on that day when Mr. Crookes' discovery of radiant matter will have resulted in a further elucidation with regard to the true source of light, and will have revolutionized all the present speculations. Further familiarity with the northern streamers of the *aurora borealis* may help the recognition of this truth." What do we find to-day? That Mr. Crookes' discovery *has* revolutionized all the then speculations with regard to light (Prof. Thomson in *Harper's Mag.* Aug. 1902), and *has* opened up all the wonderful range of investigation into the constitution of matter and the new science of radiation and all it means. But—and this is the point of special interest—Madame Blavatsky gave a hint, only nobody saw it, about the *aurora borealis* being a clue to the recognition of the truth. I confess when I heard Prof. J. J. Thomson, at the Royal Institution, lecture upon the wonderful properties of the negatively-charged particles which a Crookes' tube discharges at its cathode pole, and demonstrate the wonders of radio-activity and enlarge upon the mysteries it unfolded to his mathematical genius, I little dreamed how he was justifying H.P.B. But when he went on to show how the sun was discharging such streams of particles which, meeting earth's return electric currents in high latitude, gave rise to electrical display on a cosmic scale in all respects similar to the minute displays he had shown upon his table, and that this was the true explanation of the beautiful phenomena of the aurora, then the words of the *Secret Doctrine* rushed in upon my mind, and it is not easy to refrain from saying, on behalf of Madame Blavatsky, "I told you so!" Students of the *Secret Doctrine* would do well to mark and remember at least one indubitable forecast accurately made by H.P.B., and justified fourteen years later within the walls of the temple of science.

Turning to a fresh subject. The *Secret Doctrine* is responsible for a large number of statements about the mysterious relationship of the Moon and the Earth. The statement that, contrary to all astronomical prejudice in favour of La Place's theory, the Moon is the parent and not the child of the Earth, is of course the most fundamental. Theosophical literature abounds with information about previous cycles of planetary evolution when the moon bore the same relationship to a particular planetary scheme that the earth does now, and we find it stated that the moon was the theatre of our own early evolution in pre-human stages, that the earth drew off from her present satellite her life principles, together with the moisture that enabled life to be sustained, as well as many other details which time compels me to omit, but which can be looked up in *The Secret Doctrine*, *The Pedigree of Man*, *The Lunar Pitris*, and in Mr. Sinnett's *System to which we belong*, which now forms part of his book *The Growth of the Soul*. Recent observations made at the Lick Observatory indicate an ancient river valley traceable among the Lunar Alps. Prof. Pickering suggested the presence of life on the moon some year or two ago, but most astronomers would not as yet accept his conclusions, though it is admitted that the evidence for past life is stronger, but Prof. Haushofer, of the Berlin University, goes much further, since he is credited not only with belief in the existence of vegetable and animal life (of course under conditions vastly different from those existing here), but with the theory identical with our own, viz., that the moon was the original home of the human race. But the professor seems hampered with La Place's hypothesis, so he has to explain that the moon when separated from the earth had an abundance of atmospheric elements and the gases of which water is composed, but owing to its relatively weak gravitational attraction all these substances ultimately escaped, and what the moon lost the earth regained. He then imagines that along with the vaporous molecules the life of the moon took flight also, and thus our earth got its living inhabitants when it was ready to receive them from its more quickly developed neighbour. How far his scientific compeers would be disposed to countenance these speculations of Prof. Max Haushofer I do not know, but it is at least interesting to find scientific

thought travelling in the same direction, albeit as yet pronounced unorthodox.

But the *Secret Doctrine* is responsible for yet another statement that only the future can verify. On page 180 of Vol. I. we find that the Moon is said to be leaving the Earth and in a later cycle of our evolution will have disappeared altogether. Now in *Nature* for May 3rd of the present year I find an article dealing with the dates of Ancient Eclipses, in the course of which it is maintained that certain great secular changes are brought about by the tides, and I read "But if the tides are checking the diurnal rotation of the earth, it follows from the principle of conservation of angular momentum that the Moon must be receding from the earth!" Who will be bold to say that by the remote time indicated in the *Secret Doctrine* it may not have receded beyond recall?

If now we turn from astronomical to geological changes we open up another vast field of study—of which we can only skirmish round the outskirts in one short lecture. From the archaic stanzas which tell how Bhumi (the earth) "lay on her back; on her side": how "after thirty crores, she turned round," right through the *Secret Doctrine* we have statements as to climatic changes and violent cataclysms brought about by the combined effects of the precession of the equinoxes and the "shifting of the poles." Broadly speaking, the theory from the standpoint of occult science is that each great cycle marking certain stages in the life-history of our planet and its inhabitants has been concomitant with prodigious changes in the organism of the globe itself, frequently of a violent and cataclysmal character. At the time the *Secret Doctrine* was written the views of Lyell enforcing what we may call the quietist theory of development were so completely in the ascendant, and had so entirely superseded the older diluvian and catastrophic explanations of geological phenomena, that its statements could only be regarded as in the highest degree heterodox. But the pendulum swings, and we have only to turn to the monumental volumes of Ed. Suess' *Das Antlitz der Erde* (recently translated into English under the supervision of Prof. Sollas) to find that the greatest German geologist puts forward views entirely in harmony with those of the *Secret Doctrine*. He recognizes, for example, "a great and as yet unknown

rhythm in the evolution of living beings—a rhythm dependent on periodic changes in the inorganic environment.” Again, he says that certain facts “led me long ago to suppose that the so-called secular elevations and depressions of continents are not sufficient to explain the more limited distribution of some and the wider distribution of other formations, a phenomenon of which the cause though unknown, must be general.” Still more decisively as to great cataclysms he writes, before dealing at great length with the Flood Legends of the world :—“The enthusiasm with which the little polyp building up the coral reef, and the raindrop hollowing out the stones, have been contemplated, has, I fear, introduced into the consideration of important questions concerning the history of the earth a certain element of geological quietism—derived from the peaceable commonplaces of everyday life—an element which by no means contributes to a just conception of those phenomena which have been, and still are, of the first consequence in fashioning the present face of the earth.

“The convulsions which have affected certain parts of the earth’s crust, with a frequency far greater than was till recently supposed, show clearly enough how one-sided this point of view is. The earthquakes of the present day are certainly but faint reminiscences of those telluric movements to which the structure of almost every mountain range bears witness. Numerous examples of great mountain chains suggest by their structure the possibility and in certain cases even the probability of the occasional intervention in the course of great geologic processes of episodal disturbances of such indescribable and overpowering violence, that the imagination refuses to follow the understanding and to complete the picture of which the outlines are furnished by observations of fact.” He adds: “such catastrophes have not occurred since the existence of man, at least not since the time of *written records*.” Except for that last qualifying phrase we should have to join issue with Prof. Suess, since occult science affirms that many such violent cataclysms took place even after the advent of *physical* man, and relates that the destruction of the two great inhabited continents of Lemuria and Atlantis was brought about in such fashion, in the one case, the agency of volcanic fire predominating, in the other, the action of enormous tidal

waves engulfing the land surfaces. But in dealing with the geological conditions presented by the Mediterranean area, we find Prof. Suess after speaking of deep seas existing where lofty mountains stood, adds: "It is even possible that these events were witnessed by man." Moreover the professor's whole theory of what he calls Mediterranean stages is strikingly suggestive of correspondence with the successive cataclysms by which Atlantis was broken up, and in a score of points he shows his acceptance with Ramsay and many others "of the wide extension of a continent or series of large islands over the site of the existing North Atlantic Ocean." A close comparison of many of his statements with the maps (six in all) furnished in connection with stories of Lemuria and Atlantis from the occult standpoint, will be found to richly repay the student, but we must pass from Prof. Suess to find other investigators confirming the teachings of the *Secret Doctrine*. For example, Professor Milne, of earthquake fame, is another of those who think that a movement of the earth's pole may be concomitant with great disturbances of the crust. The recorded movement at present is of course slight and must not be associated with ideas of the earth rolling over on her side! But, nevertheless, the Pole is said to wander in an "irregular manner" over a small area, and Professor Milne is said to have noted that "large earthquakes are rather more liable to occur when the Pole is turning a sharp corner."*

Professor Darwin, too, thinks that the Pole may have wandered as much as 15 degrees from its original position, but he, with Lord Kelvin, would assign so long a period for the change that they would not regard it as the *cause* of crust disturbance but rather as an accompaniment of great shiftings of land and water surfaces. All considerations of this kind which point to vast secular changes affecting the climate of our globe bear upon another problem—the birthplace of man. On this the *Secret Doctrine* in common with ancient Hindu tradition is emphatically in favour of the North Polar region as having been the true Eden of our race—the Mount Meru of Hindu mythology. Geologists have of course always recognised the sub-

* Hon. R. J. Strutt, F.R.S., in *Tribune*.

tropical character of the Miocene formation found in Greenland, but until lately none have been found daring enough to associate man with so distant an Eden. Some years ago, however, Count Björnstjerna, a Swede, promulgated the theory that the North Polar region was the original home of white men, while the black races came from the South pole. More recently G. R. Wieland (*American Journal of Science*) dealt with the distribution of Life from Polar areas, and during this summer Professor Dr. Ludwig Wilser, of Heidelberg, a great authority on Natural History, has published an interesting article which Frau Lübke was kind enough to obtain and translate for me, in which he comes to the conclusion that the place of origin of the great mammalia, "and consequently also of men, is now buried under eternal ice or sleeps in the bosom of the sea of that old Northern region of Arktogaea." "Arktogaea" is the term for North polar region which he derives from another German savant, Kriz—who was also a believer in the Polar centre of evolution. So in another direction is the occult tradition beginning to be justified, and thus from branch to branch of scientific inquiry may we turn for ever accumulating proof that those who gave the impulse to Modern Theosophy through the pen of Madame Blavatsky knew that whereof they testified although their scribe may often have blundered in the transcription. One field of research which has been often alluded to in our recent literature as corroborating the ancient teaching must be only mentioned here—I mean the work of Prof. J. C. Bose, whose experiments have so beautifully shown the identity of response to stimulation exhibited by matter, whether animal, vegetable or mineral, and thus demonstrated the underlying unity in the physical plane. And not less valuable the long and patient researches of Prof. von Schrön, whose evidences of life-processes in crystallisation are of profoundest interest to the student, who accepts the statement of the *Secret Doctrine* that "Each atom is a life."* M. Guillaume, in a recent number of

* Von Schrön himself writes: "My researches into the primary origin of crystals, into their vital and later universal states, have convinced me that there is only one force acting upon matter in all its aspects, the force which we call life. I have been compelled to

La Nature, contends that the mutability of solid matter constitutes "a kind of inferior life that has been unsuspected hitherto, but that can no longer be neglected by the attentive observer." To which we say "Amen." As for the innumerable links between man and metals, showing infinite gradations of mind and feeling, they are to be found set forth in numerous books or articles by a small army of modern investigators: we only need name Romanes, E. P. Evans, Prof. Slater of Harvard, Marcus Reed, Howard Moore of Chicago University, Seton Thomson, Sir Herbert Maxwell.

And thus we end as we began with the thought of *unity* as the key to the world mystery. The Truth which is our goal and the ideal towards which life slowly moves. The poet handled the world-key when he wrote of the "flower in the crannied wall," and sighed for the understanding of what it was "root and all and all in all," since then he would "know what God and Man is." And the scientist touches it from his point of view when he writes "Just as the infinite universe is one great Whole . . . so the spiritual and moral life of man is part of this cosmos, and our naturalistic ordering of it must also be monistic."* For, as it is written in the great Scripture of Union, "Seated equally in all beings, the supreme Ishvara, indestructible within the destructible—he who thus seeth, he seeth"†—and "we needs *must* choose the highest *when* we see it."

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believe, from the way in which life force shapes the crystals and from all the attendant phenomena, that all other forces—heat, light, chemical force, electricity, cohesion—are but different manifestations of life force."

* Haeckel. *Riddle of the Universe*.

† Bhāgavad Gītā. Trans. A. Besant.

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